

On page 22, line 2, replace the paragraph beginning with "- "X5OS" is a silica/elastomer" with the following paragraph:

a3
- "X5OS" is a silica/elastomer bonding agent sold by Degussa that is formed by the association of the bonding agent "Si69" (bis-3-(triethoxysilylpropyl) tetrasulphide) and carbon black N330 in a 50/50 weight ratio.

On page 23, line 13, replace the paragraph beginning with "Start of irregular" with the following paragraph:

a4

Start of irregular wear (1000 km)	48		80	80	80	80
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REMARKS

Claims 1-24 were pending. Over Applicant's traversal, claims 13-24 have been withdrawn by the Examiner pursuant to 37 C.F.R. § 1.142(b) as being drawn to a non-elected invention. Applicant traverses the restriction requirement below. As such, claims 1-24 remain pending. A marked-up version of the amended specification, in which deleted text is indicated by square brackets and added text is indicated by underlining, is attached hereto as Exhibit A. The specification has been amended to insert a title and to correct typographical errors. No new matter has been inserted by these amendments.

Objections To The Specification

The Examiner has objected to the specification for informalities. In response, applicant notes that:

(a) The specification has been amended to insert the title of the invention.

(Office Action at § 1).

(b) The paragraph beginning on page 10, line 16 of the instant specification has been amended to recite the full name of the "BET" and "CTAB" methodologies. Applicants further note that the BET and CTAB methods are described in this paragraph . These methodologies are well known to one of skill in the art and applicants submit that no further description is required. *See Spectra-Physics, Inc. v. Coherent, Inc.*, 827 F.2d 1524, 1534, 3 U.S.P.Q.2d 1737, 1743 (Fed.Cir.1987) ("A patent need not teach, and preferably omits, what is well known in the art."); *In re Howarth*, 654 F.2d 103, 105, 210 U.S.P.Q. 689, 691 (C.C.P.A. 1981) ("An inventor need not, however, explain every detail since he is speaking to those skilled in the art."); *In re Gay*, 309 F.2d 769, 774, 135 U.S.P.Q. 311, 316 (C.C.P.A. 1962) ("Not every last detail is to be described, else patent specifications would turn into production specifications, which they were never intended to be.").

(c)-(e) The typographical errors have been corrected. Applicant also notes that the correction to the typographical error on page 22, line 3 regarding the 50/50 weight ration is supported in the specification at page 15, line 9.

In view of the above, applicant requests withdrawal of the objection.

The Restriction Requirement

In a telephone call to Applicant on July 3, 2002, in which the Examiner presented a restriction requirement, a provisional election with traverse was made to prosecute the invention of Group I. Pursuant to 37 C.F.R. § 1.142(b), the Examiner has withdrawn claims 13-24 from consideration as being directed to a non-elected invention. (Office Action at § 4).

The Office Action asserts that restriction to one of the following inventions is required under 35 U.S.C. § 121:

- I. Claims 1-12 drawn to a cross-linked rubber composition for the tread of a heavy-vehicle tire, classified in class 524, subclass 262; and
- II. Claims 13-24, drawn to a process of making a rubber composition for the tread of a heavy-vehicle tire, classified in class 524, subclass 492.

The Office Action states that the inventions are distinct because, although Groups I and II are related as process of making and product made, "the process of Group II does not always produce the composition useful in Group I." (Office Action at §§ 2-3).

Applicant respectfully traverses, and as required by 37 C.F.R. § 1.143, indicates a provisional election of one invention for prosecution, hereby affirming the election of Group I. However, Applicant notes that the Office Action does not state that the process of Group II can be used to make another materially different product. *See* M.P.E.P. § 806.05(f). Indeed, the process of Group II requires a product encompassed within the scope of the invention of Group I.

The Office Action also suggests that the inventions of Groups I and II are distinct because each has acquired a separate status in the art as shown by their different classification. (Office Action at § 3). Nevertheless, there are two criteria for a proper requirement for restriction: (1) the inventions must be independent or distinct as claimed; and (2) a search and examination of the claims would necessarily impose be a serious burden on the examiner. M.P.E.P. § 803. Indeed, if the search and examination of an entire application can be made without serious burden, the examiner must examine all claims on the merits, even though the application includes claims to independent or distinct inventions. M.P.E.P. § 803.

Applicant respectfully asserts that examination of the entire scope of claims 1-24 would not impose a serious burden on the Examiner. The product claims of Group I and the process claims of Group II are so intimately related such that searching and examining the claims together would not pose a serious burden. Accordingly, Applicant respectfully requests reconsideration and withdrawal of the restriction requirement in accordance with 37 C.F.R. §1.143. Applicant hereby preserves his right of petition from requirement for restriction under 37 C.F.R. § 1.144.

Rejections Under 35 U.S.C. § 102(e)

Claims 1-6, 8 and 10-11 are rejected under 35 U.S.C. § 102(e), as allegedly being anticipated by U.S. Patent No. 6,177,503 to Araki et al. ("Araki"). (Office Action at §§ 6-8). Pointing to Araki at column 13, lines 7-8, the Office Action contends that Araki discloses a rubber composition for a tire tread that anticipates the tire of the instantly claimed invention. (Office Action at § 7).

Applicant respectfully disagrees. As recognized by the Office Action, the instant invention relates heavy-vehicle tires (Office Action at § 6). In direct contrast, Araki discloses rubber compositions for passenger-vehicle tires (Araki at column 9, lines 40-58; column 10, lines 20-22). The skilled artisan would readily appreciate that the rubber compositions used in a heavy-vehicle tire differs from the rubber compositions used in passenger tires due to the significant differences between heavy-vehicle tires and passenger-vehicle tires.

For example, it is widely known that heavy-vehicle tires exhibit much greater inflation pressure, such that heavy-vehicle tires are typically inflated to a pressure of about eight (8) bars whereas passenger-vehicle tires are inflated to a pressure of only about two (2) bars.

Moreover, heavy-vehicle tires exhibit a higher resistance to heavy loads, which is imparted by architecture specific to these tires.

Additionally, it is widely known that heavy-vehicle tires have much larger dimensions (e.g., 295/80-22.5, 315/70-22.5, 315/80-22.5) than the small-sized 185/65-14 passenger-vehicle tires disclosed in Araki.

As such, the instantly claimed heavy-vehicle tire simply cannot be anticipated by rubber compositions relating to passenger-vehicle tires as taught by Araki. *See, e.g., Titanium Metals Corp. v. Banner*, 778 F.2d 775 (Fed. Cir. 1985) (anticipation “can be found only where the reference discloses exactly what is claimed”). Here, given the significant differences between the stresses and pressure that heavy vehicle tires and passenger vehicle tires are subjected to, as well as the differences in the dimensions of the tires, a disclosure of a rubber composition for use in passenger vehicle tires cannot anticipate a heavy vehicle tire comprising a tread formed from a cross-linked rubber composition. Applicant thus respectfully requests withdrawal of the rejections under 35 U.S.C. § 102(e).

Additionally, applicants question the statement in the Office Action that the changes made to 35 U.S.C. § 102(e) by the APIA do not apply to the examination of this application as the application “was not filed on or after November 29, 2000.” (Office Action, p. 5). Applicants note that the present application was filed on February 7, 2001, which is after November 29, 2000.

Rejections Under 35 U.S.C. § 103(a)

The claims are rejected under 35 U.S.C. § 103(a) as allegedly being obvious over Araki in view of U.S. Patent No. 5,674,932 to Agostini et al. ("Agostini") (Office Action at §§ 9-11 regarding claims 7 and 10), U.S. Patent No. 5,989,719 to Loiselle ("Loiselle") (Office Action at §§ 11-13 regarding claims 9 and 12), U.S. Patent No. 6,028,137 to Mahmud et al. ("Mahmud") and/or U.S. Patent No. 6,177,503 to Cabioch ("Cabioch") (Office Action at §§ 14-18 regarding claims 1-6, 8-9 and 11-12). Furthermore, claims 7 and 10 are rejected as allegedly being obvious in view of Mahmud and Agostini. Applicant respectfully traverses.

The instant invention relates to a heavy-vehicle tire having a rubber composition in the treads that delays the appearance of irregular tread wear. During road travel, these tires exhibit delayed appearance of irregular wear of the tread when compared to known treads for heavy-vehicle tires. Treads of heavy-vehicle tires are conventionally made of compositions primarily based on natural rubber and carbon black, or based on copolymers of a conjugated diene and a vinyl aromatic compound and silica, which are subject to early appearance of irregular tread wear (*see* instant specification at page 5, lines 6-11; Figure 1 of the instant specification). The present invention thus solves the problem of accelerated rubber loss in the central and shoulder ribs of the heavy-vehicle tire tread. Notably, the claimed tire exhibits a delayed appearance of irregular wear, independently of the wear resistance and rolling resistance properties of the tread.

In contrast, Araki teaches a rubber composition ostensibly for passenger-vehicle tires that demonstrates improved workability, improved shrinkage, improved uniformity, and better abrasion resistance (*see* column 2, lines 9-16). As such, Araki is concerned with wear and abrasion, which poses a very different problem from that of irregular wear. (See specification,

page 1 line 24 to page 2 line 4). The first appearance of irregular wear is conventionally understood as the point at which the gradient of the characteristic loss of rubber increases dramatically as a function of distance traveled. (*See, e.g.*, Figure 1 of the instant specification). Thus, as noted in the instant specification, the appearance of irregular wear is independent of a tire's wear resistance. (*See* instant specification at page 1, line 24 to page 2, line 1). Therefore, Araki is not at all concerned with the problem of irregular tire wear, but with the very different problem of abrasion resistance. (Araki at column 11, lines 65-67 "The pneumatic tire obtained by using this rubber composition shows excellent uniformity and abrasion resistance.").

Indeed, Araki teachings are not even directed to the heavy-vehicle tire. Nowhere in Araki can teaching or suggestion be found to apply Araki's rubber composition to the heavy-vehicle tire. In fact, the disclosed compositions are typically not used for heavy-vehicle tires, but for passenger-vehicle tires treads, as clearly demonstrated, for example, at column 10, line 22 where tires of the size 185/65-14 were placed on 2000 cc passenger car and tested after only 30,000 km. Indeed, the weight loss rate due to irregular tire wear does not typically accelerate until at least 60,000 km (*see* Figure 1 of the instant specification). Therefore, Araki's teachings clearly are directed only to passenger-vehicle tires and without regard to the phenomenon of irregular tire wear. Moreover, Araki's teachings cannot fairly predict usefulness for heavy-vehicle tires, much less predict applicability for delaying the appearance of irregular wear in a heavy-vehicle tire.

Agostini teaches a process for preparing a silica-reinforced rubber composition for a tire tread containing a silica coupler. The Office Action points out that Agostini teaches silica having a CTAB surface area of about 100 to about 220 m²/g. (Office Action at § 11). Claiming that the skilled artisan would be so motivated, the Office Action proposes to combine

Agostini with Araki, which the Office Action admits is silent with respect to CTAB values (Office Action at § 10), to arrive at the present invention which claims a CTAB specific surface area of 80-260 m²/g. Agostini's teachings are not directed to irregular tread wear or tires for heavy loads.

It is alleged that Loiselle teaches a composition comprising heat-curable, liquid silicone rubber and silica as a reinforcing filler. (Office Action at § 12). Claiming analogous art with Araki, the Office Action offers that the skilled artisan would have been motivated to combine Loiselle with Araki, which the Office Action admits is silent with respect to alkyl alkoxy silane-modification (Office Action at § 11), to arrive at the present invention which requires such modification (Office Action at § 13). Loiselle's teachings are not directed to irregular tread wear or tires for heavy loads.

The Office Action also offers to combine the teachings of Mahmud, which the Office Action admits does not use a chain end-modified diene polymer with a silanol end group (Office Action at § 18), with the teachings of Araki, Cabioch, and/or Agostini to arrive at the claimed invention. However, Mahmud teaches a white filler made of an elastomeric compound having a silicon-treated carbon black in lieu of silica, which Mahmud claims has undesirable properties. (See Mahmud at column 2, lines 29-50). Moreover, Mahmud teaches that its rubber composition exhibits improved hysteretic properties, irrespective of the elastomer employed. (See Mahmud at column 12, line 53 to column 13, line 20 which also teaches acrylonitrile and chlorinated rubber which are not usable for tire treads).

In fact, by proposing to use a silicon-treated carbon black white filler to improve the hysteretic properties of a rubber composition, absolutely irrespective of the incorporated elastomer (including the use of acrylonitrile and chlorinated rubber which cannot be used for tire

treads), Mahmud actually teaches away from the present invention. Indeed, no skilled artisan would be led to combine Araki, Cabioch and/or Agostini, each of which use of a specific elastomer, with the contradictory teachings of Mahmud. Furthermore, Mahmud's teachings are not directed to irregular tread wear in heavy-load tires.

It is alleged that Cabioch teaches a silica-reinforced rubber composition, which exhibits reduced hysteresis and reduced rolling resistance regardless of the location of the composition in the tire. (Office Action at § 18). Pursuant to Cabioch's teachings, its rubber composition may be found in the tread, tread undercoating, or sidewall rubber. (See Cabioch at column 14, lines 4-7). Further distinguishing Cabioch from the instant invention is that the disclosed composition comprises a diene polymer that is functionalized by a silanol group or by a polysiloxane block having a silanol end. Notably, Cabioch's teachings are not directed to irregular tread wear or tires for heavy loads.

Most importantly, none of the cited references even teach or suggest a heavy-vehicle tire that resists irregular wear. Thus, wholly apart from the lack of motivation to combine, the cited references when combined as set forth in the Office Action, simply fail to arrive at the instantly claimed invention, which is a heavy-vehicle tire having a tread that resists irregular wear.

Furthermore, none of the cited references teach or suggest delaying the appearance of irregular tread wear of a heavy-vehicle tire. The cited references thus lack the necessary motivation to combine their respective teachings. A *prima facie* case of obviousness requires a showing of suggestion or motivation, either in the cited reference or in the ordinary knowledge of those skilled in the art, to modify the cited reference so as to arrive at the claimed invention. *See, e.g., In re Rouffet*, 149 F.3d 1350, 1355, 47 U.S.P.Q.2d 1453, 1456 (Fed. Cir.

1998) (finding failure to make a *prima facie* case of obviousness absent any evidence of teaching, suggestion or motivation to meet the claimed invention); *see also* M.P.E.P. § 2143. Applicant points out that no teaching or suggestion has been identified within any single cited reference to combine its teachings with those of any other reference. Additionally, no suggestion or motivation has been asserted to be found in the prior art to modify the cited references to reach the claimed invention.

In fact, the Office Action admits that each reference fails to disclose at least one element of the claimed invention, but nevertheless relies on the skilled artisan to supply the suggestion to modify the cited reference to meet the claimed invention. The assertion that it would have been obvious to so modify each cited reference to arrive at the instant invention is not sufficient to establish a *prima facie* case of obviousness without some objective reason to so modify the prior art references. *See* M.P.E.P. § 2143.01. The level of skill in the art simply cannot be relied upon to provide the suggestion to combine the prior art references. *See Al-Site Corp. v. VSI Int'l Inc.*, 174 F.3d 1308, 50 U.S.P.Q.2d 1161 (Fed. Cir. 1999); *see also* M.P.E.P. § 2143.01. Therefore, since nothing in the prior art has been offered to suggest modifying the cited references, the claims cannot be obvious in view of the cited references, either alone or in combination.

As such, Applicant respectfully requests withdrawal of the rejections under 35 U.S.C. § 103(a).

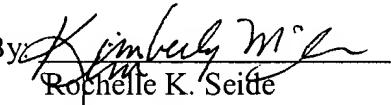
CONCLUSION

In view of the foregoing amendments and remarks, Applicant respectfully requests withdrawal of the outstanding rejections and allowance of the pending claims. Applicant does not believe that any fee, other than an extension of time fee, is required in connection with this submission. However, should any other fee be required, the Commissioner is hereby authorized to charge any such fee to Deposit Account 02-4377. Duplicate copies of this sheet are enclosed.

Respectfully submitted,

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